

AMENDMENTS TO THE CLAIMS

1. (currently amended) An on-chip high-pass filter with large time constant, comprising:

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a capacitor connected between an input port and an output port;

a first transistor having a first terminal connected to a first voltage source and a second terminal connected to the capacitor-output port; and

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a second transistor having a first terminal connected to the second terminal of the first transistor and a second terminal connected to ground; and

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a second voltage source connected to a third terminal of the first transistor and the second transistor such that the first and the second transistors are operated in a saturation mode;

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wherein by operating the first and the second transistors in the saturation mode, the first transistor and the second transistor are operated for operating as a large-resistance resistor.

2. (original) The on-chip high-pass filter of claim 1, wherein the first transistor is an n-type transistor.

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3. (original) The on-chip high-pass filter of claim 1, wherein the second transistor is a p-type transistor.

4. (cancelled)

30 5. (currently amended) The on-chip high-pass filter of claim 4, claim 1, wherein the second voltage source includes:

a third transistor having a first terminal connected to the first voltage source, a second terminal connected to the third terminal of the first and the second transistor, and a third terminal connected to the second terminal thereof; and

5 a fourth transistor having a first terminal connected to the second terminal of the first transistor, a second terminal connected to ground, and a third terminal connected to the first terminal thereof.

6. (currently amended) The on-chip high-pass filter of claim 4, claim 1, wherein the
10 second voltage source includes:

a third transistor having a first terminal connected to the first voltage source, a second terminal, and a third terminal;

15 a fourth transistor having a first terminal connected to the second terminal of the first transistor, a second terminal connected to ground, and a third terminal; and

20 an amplifier having a first input terminal connected to the second terminal of the first transistor, a second input terminal connected to a bias voltage source, and an output terminal connected to the third terminal of the first, the second, the third, and the fourth transistor.

7. (new) A high-pass filter comprising:

25 a capacitor connected between an input port and an output port;

a first transistor having a first terminal connected to a first voltage and a second terminal connected to the output port;

30 a second transistor having a first terminal connected to the second terminal of the first transistor, a second terminal connected to ground, and a third terminal connected to a third terminal of the first transistor; and

a second voltage source connected to the third terminal of the first transistor and the second transistor such that the first transistor and the second transistor are operated as a large-resistance resistor.

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8. (new) The high-pass filter of claim 7, wherein the first transistor is an n-type transistor.

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9. (new) The high-pass filter of claim 7, wherein the second transistor is a p-type transistor.

10. (new) The high-pass filter of claim 7, wherein the second voltage source comprises:

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a third transistor having a first terminal connected to the first voltage, a second terminal connected to the third terminal of the first and the second transistor, and a third terminal connected to the second terminal thereof; and

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a fourth transistor having a first terminal connected to the second terminal of the first transistor, a second terminal connected to ground, and a third terminal connected to the first terminal thereof.

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11. (new) The high-pass filter of claim 7, wherein the second voltage source comprises:

a third transistor having a first terminal connected to the first voltage, a second terminal, and a third terminal;

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a fourth transistor having a first terminal connected to the second terminal of the first transistor, a second terminal connected to ground, and a third terminal; and

an amplifier having a first input terminal connected to the second terminal of the

first transistor, a second input terminal connected to a bias voltage, and an output terminal connected to the third terminal of the first, the second, the third, and the fourth transistor.

- 5 12. (new) The high-pass filter of claim 7, wherein the first and the second transistors are operated in a saturation mode.